

ABSTRACT

A method and system in accordance with the present invention comprises a thread stack/thread heap combination, wherein the thread heap is for thread local memory usage and wherein the thread stack and thread heap grow in opposite directions. In the present invention the thread specific heap is allocated next to the thread's stack and grows in the opposite direction from that of the stack. This improvement allows the current space management of thread stacks, which spread out the memory placement of multiple stacks to avoid collision, to also be used for the heaps without additional overhead or complexity. It also allows the existing growth scheme of adding memory pages to the process for the stack to be used again because the growth is simply in the opposite direction. Thread specific heaps eliminate the need for expensive synchronization when allocating from a shared heap in a multiprocessor environment. In the present invention, a method and system is provided that reduces contention for thread-local private memory and does not increase the number of memory regions needed for a process. The thread stack and a thread heap are combined for memory allocation into the same memory region with a dead zone separating it from other thread stack/heap combinations.